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Is Photography a Fine Art?

Edmund von Mach, Ph. D., Instructor in the History of Greek Art, Harvard University

PAINTING, sculpture and architecture are fine arts; many people add poetry and music and rhythmical dancing; and quite recently the attempt has been made to admit photography to the exalted company.

The majority of people know—or rather have a feeling of what art is, though no two agree when asked to define it. Painting is a fine art, but not every painting is a work of art.

The child mixes his colors and shades off a few paints, but he does not create a work of art; Millet does the same and becomes immortal. It is the personality of the artist and his technical perfection which ennoble his creation. The question therefore, is "Is photography a medium by which a great personality can express itself?"

The very mechanical process of photography has prejudiecd many, who, therefore, have answered the question in the negative. They are, however, often the same people who greatly appreciate a fine engraving. The collection of prints and engravings at Harvard forms a very important part of the art collections of the University; and last year the Harvard Faculty voted to introduce in the Fine Arts Department a new course on engravings. There is no more mechanical process than turning off the print from the finished plate, but the fact that a merely mechanical process has taken place at some stage does not debar the print from its right to pass as a work of art.

The same is true of a photograph, and the work of the photographer, therefore, has the same right, provided the photographer, like the engraver, is able to impress his own refined personality in some distinct way upon his work. This can be done in the first place by the proper and always individual selection of the motive, and secondly by delicacy of workmanship in developing the plate and eclecticism in printing it.

The objection has been made that the personal introduction of character lay outside the province of photography, and that such a creation was no longer a photograph. This, however, is a restriction upon the meaning of the word which is as unjust as if one were to find fault with the well established use of the word print, because it does not make any reference to the personal element of the artist who engraved the plate.

No one familiar with the achievements of modern photography can

deny that photography gives large scope to the expression of individual character. Photographs have been exhibited which not even a skilful eye could distinguish from the finest engravings. If such photographs were made by Albert Durer or Rembrandt, who were the perfectors of the process of engraving, no one would deny their value as works of art, but being the work often of men of little training, they meet with much opposition from the quarter where the photographer might get his greatest help and inspiration—the art historian and the connoisseur.

Before even the greatest genius can adequately express himself in painting, he has to undergo a period of prolonged and painstaking study, and the hours which the great musician spends in practising are numberless. This being the case people are apt to judge—perhaps unconsciously—of the value of a masterpiece by the length of preparation which the artist had to undergo. And this is not unreasonable, for men grow by overcoming obstacles and by grappling again and again with the same difficult problem. Photography is an easy art which requires comparatively little preparation, although mastery also here is vouchsafed only to the few.

There are not many people, except the gifted, who paint or carve or play, but hosts try their hands at photography; and more worthless photographs are produced than all the worthless stuff of all the other arts combined. This fact, however, has as little to do with the question whether photography is a fine art, as the crude advertising sign has to do with assigning to the art of painting its proper place. In so far as both painting and photography offer the means of individual expression on the part of a refined nature, they are both potentially fine arts. The two ways in which the individuality of the man may show itself in the photograph are well known. Retouching the plate, i. e. removing superfluous lines and introducing new ones or altering the value of the existing, is a fairly difficult process to which only few amateurs have recourse. The same is true of the different processes of printing in which the several parts of the plate are treated in different ways.

The selection of the proper motives, however, or the posing of single figures, is something that every photographer must do. It is here that he can and must show whether he is an artist or not. To be an artist, i. e a man with clear, sincere and noble ideals and an honest love of the beautiful, ought to be the primary aim of the photographer. But to be such a man is not an easy matter. It means a broad and liberal education and a careful training of character.

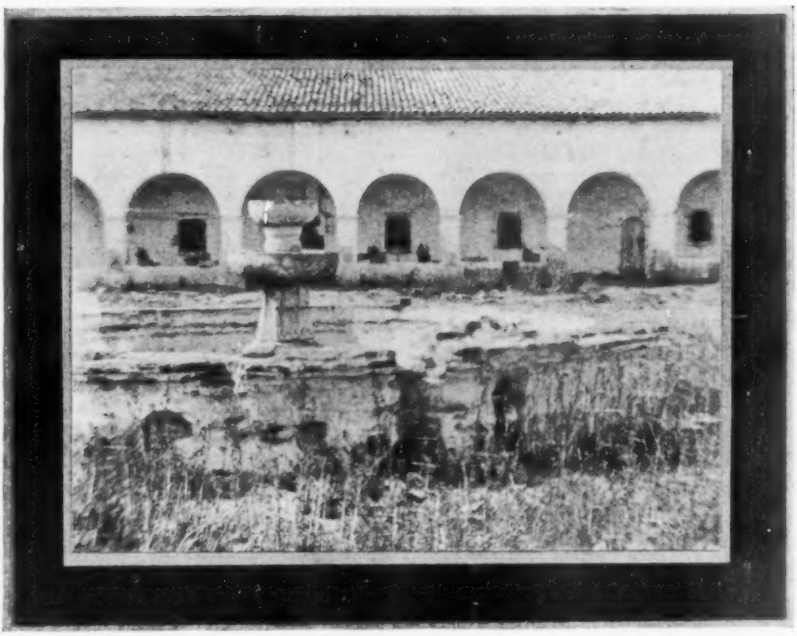
Here lies the social importance of the art of photography. The mechanical ease and comparative cheapness of the process have attracted vast numbers. In olden times the destiny of the country lay with the king or the nobles, now it rests with the people. Photography, if properly understood, cannot help awaking the masses who try their hand at it to the important question of the beautiful in its manifold ways of expression.

More people probably will make photographs for many years to come than ever will be able to create a work of art, because they are not yet artists; but this does not in the least detract from the educational value of photography. People learn by doing, and some will continue to do it so well, that even the most fastidious will be compelled to acknowledge that in the hands of the artist photography is a fine art.

The California Missions

SAN FERNANDO REY.

ALVIN LANGDON COBURN.



THE FOUNTAIN. San Fernando Mission. By A. L. Coburn.

TO any one interested in architectural photography, the old Franciscan Missions of California offer an excellent chance for profitable study.

There are about twenty of them in all and they extend from as far north as the Dolores Mission in San Francisco to the San Diego Mission in the south, and are nearly all located on or near the sea coast. Built as they nearly all were in the eighteenth century, and of adobe, many of them are fast being totally obliterated by the winter rains. On the other hand a number of them are still occupied by the Franciscans themselves and are in excellent preservation.

San Fernando, the Mission with with which we have to deal this month was founded in the year 1797, and having been recently very carefully restored by the Landmark Club of Southern California, is now occupied by a family of ranchers.

Indeed the trials of the photographer are many, for the fine old corridor with all its arches in the front of the building is now used for a carriage house and but for the courtesy of the people I would have been unable to get anything of satisfactory nature. They, however allowed me to pull the two large "buggies" and a covered wagon into the rear of the building, which, with some little trouble I succeded in doing—not being by any means a Hercules— and so let any one who thinks that photography is an easy means of artistic

GENERAL VIEW, SAN FERNANDO MISSION. BY A. L. COBURN.

expression go to the Mission of San Fernando and they will find that there is more to do than to "push the button" and idly imagine that somebody else is going to "do the rest."

The fountain is one of the most interesting as well as one of the most beautiful features, harmonizing as it does with the architecture of the building, and when you look at it with half closed eyes, if you have a good imagination, you can almost see the sparkling water and little gold fish that played about in it a century ago.

The grounds of the mission which cover several acres were originally enclosed with a thick adobe wall, a fragment of which is shown in the upper left hand corner of the general view reproduced herewith, for protection against hostile Indians and it must have made the place almost impregnable from the remains.

The San Fernando mission is one of the largest and probably had more inmates than almost any of the others but it is rarely visited by tourists not being very accessible but situated as it is among the mountains with a clear running stream near by it is an ideal spot and well worthy of a visit.

It was well on toward evening when I started to drive back to the train and the glory of the sunset over those purple mountains was a sight not easily forgotten. It was one of those scenes that if it were painted you would at once declare the color scheme unreal. When the train pulled up at the station there was a certain amount of satisfaction in knowing that at least a few of the films in my roll holder had been exposed.

THE CORRIDORS. San Fernando, Mission. By A. L. Coburn.

The Country in Summer

HERBERT W. TAYLOR

Through the ample open door of the peaceful country barn,
A sunlit pasture field with cattle and horses feeding,
And haze and vista, and the far horizon fading away.

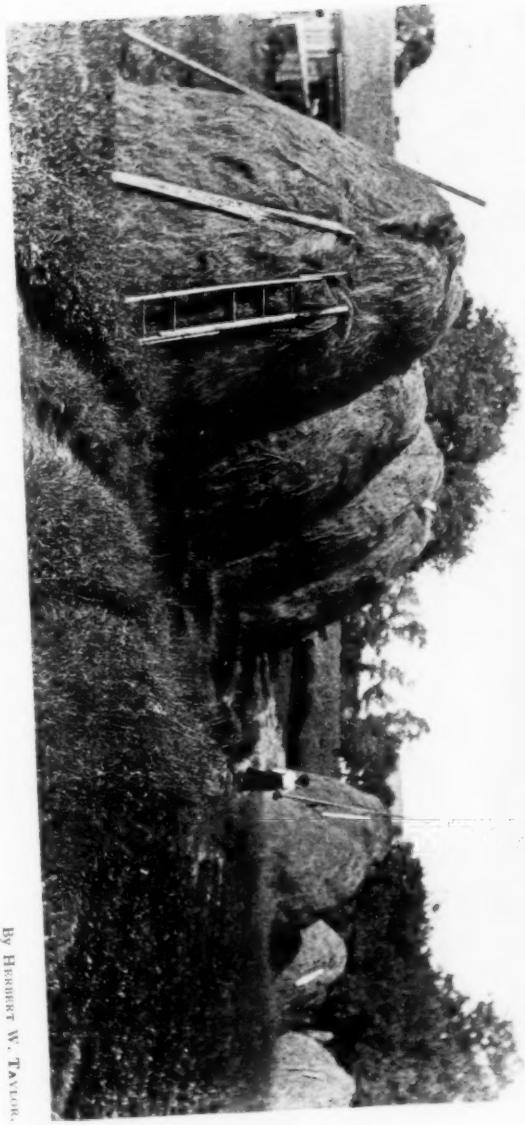
Walt Whitman.

WHITMAN'S lines kept running through my mind as I packed my camera and plates into the trunk, jamming a new coat and other articles of apparel into tight corners, regardless of wrinkles as long as the sacred instrument and precious plates be protected from accident, for summer had come and after a year of trying work the longed-for vacation was at hand. The thought of a quiet spot in the country where I could be a boy again for a few weeks was delicious. Memories rushed crowding into my mind of gorgeous July sunsets, glorious moonlight nights, and long drives behind old Polly, or big, lazy Domino with his clever trick of rubbing his great white face against yours.

Little photographic tragedies came back to me as humorous remembrances of futile efforts to darken a room having three windows, the experiment of developing at the brook by moonlight, and the impatient waiting for night so that the process might be performed in one's own chamber. How the plates frilled until I learned to use the alum fixing bath, and then the difficulties attending the washing! I once tried laying the plates in a row upon a board and pumping water over them from a well. Of course the board was warped so that some part of each plate was high and dry, and I was obliged to keep at work pumping all through a sudden downpour of rain. But these petty tribulations fade into insignificance beside the many pleasures of a vacation spent in the country.

What great sport it was for the city man to bring up the cows on those nights when the farmer's boy had gone to town, and what a struggle withal! Anyone casually noticing the soft-eyed kine would never suspect the fund of contrariness lurking behind those deep, wistful orbs. The particular cows which I have in mind delighted in hiding where the woods were darkest, standing so quietly that no faint tinkling of the bell might assist the searcher, and no appealing "come boss" could seduce a betrayal of their whereabouts; but once discovered, the procession to the barn-yard would start as unconcernedly as though it were all a matter of course—and then the obstinate refusals to "head-up" between the right stanchions! One day, after giving each a handful of salt, I walked out through the pasture and hearing a soft tread turned to see a ridiculous string of cows following at my heels in Indian file.

The kind-hearted farmer had quite spoiled his pets. The horses began to clamor for green grass or potatoes immediately we appeared at the door, and a pair of enormous oxen were nothing but great babies that plaintively called to be noticed and photographed. Dummy, the dog, so called because he never spoke save with his tail, let us know that he really had lungs when he came back from a meeting with a hedgehog, his nose bristling with quills. He had learned a



"In ripening summer the full laden vales
Give prospect of employment for the flails."
Thomson.

By Herbert W. Taylor.

valuable lesson towards restraining his curiosity.

A handful of grass held over the camera would interest the horses in the barn long enough to catch them, though the artist needs must seize the psychological moment. On the other hand, the oxen entered heartily into the spirit of the thing, so much so that they could not be kept far enough away for focusing, but wanted to see if there were not something to eat in that strange box on three legs, just as the small boy must see interesting objects with his fingers.

legged herons lazily floating over the marshes; the cat-bird with his shrill cry; and the whip-poor-will, whose sad evening note carries with it a feeling of desolation and homesickness. Saucy squirrels and awkward rabbits enliven the drives and the rare glimpse of a deer is a sight to be treasured. Even the brown and yellow snakes that come out on bright days to bask in the warmth of the sun seem beautiful once the feeling of repulsion is overcome.

The incidents of the work on the farm present a succession of scenes replete with material for genre pict

THE FARMER'S PETS. By Herbert W. Taylor.

The country teems with inspiration for the lover of nature, whether he express his impressions in meter or by means of the lens. Both must feel a lingering fondness for the farmer's pets, while a rare interest attaches to the untamed life of the air and the woods. What fascinating creatures we see flying about the country — eagles that lie in wait for a fish-hawk and swooping down upon the luckless fisherman, catch the pulnder dropped by the frightened hawk, before it touches earth; long-

ures. First there is the man with the hoe. Hoeing weeds does not at first glance seem to be an elevating employment, but when the corn begins to wave and peas and beans are ready for the table the back-breaking hoe becomes almost glorified, for without the labor there could be no garden filled with earth's bountiful blessings. And how we should miss the rows and rows of bright green foliage, parsnips, carrots, onions and cabbages, mixed in with red beet-leaves and fringed with

THE GOLF GIRL. By H. W. Taylor.

groups of poppies and sun-flowers; the rustic fence and tumble-down gate with holes large enough to admit the useful toad, but barring Biddy and her brood from the sacred precincts of the farmer's greatest joy and source of all his luxuries—the garden.

The charm of a farmer's life lies in the ever-changing variety, each season and each month bringing in turn its especial work, so after the hoeing he, with the photographer, prays for fair skies while the hay crop is housed.

Next comes the nervous, impetuous rush of the summer boarder. Peace and quiet disappear with the best china for a season, while old Dobbin finds that the real work time of the year has come. Nevertheless, the really greatest joy of nature finds expression in light-hearted girlish laughter and the guileless prattle of children. The golf girl is an ideal picture of the glad time when the heart is young, while even the important young man in flannels brings a new and welcome influence into the life of the country.

Picnics, straw-rides and berryings follow quickly on each other's heels and the bang, bang, bangety bang of the piano all day long merely aids and abets those delicious little affairs of the heart which thrive in quiet walks and shady spots, just out of sight of the piazza where the mammas work rainbow shawls and Kensington, deep in their own harmless gossip.

About supper time the summer girl—bless her for her dainty gown and the string of hearts dangling from a fascinating little finger-tip—the summer girl appears in all her glory, bringing gladness to the soul of even the crabbed old bachelor, if he would but be honest enough to own it.

Surely the picture-maker must love the country in summer and some of the pleasantest thoughts during the busy year will be the reminiscences attaching to the vacation pictures. I feel confident that my brother and sister photographers will join me in agreeing with the old song,—"Don't you think that summer is the pleasantest of all?"

VIEGE, SWITZERLAND. By M. Goddard.

T WHARF, BOSTON. By Wendell G. Corthell.

Grandpa Treats of Some Very Remarkable Discoveries

Dear Children : —

I think that you always come to bother me while I'm napping or sleepy, so that yesterday morning, when you came, I had to promise to write it out, especially since, otherwise, you have been pretty good. I don't quite altogether like you to say that my Little Lessons have not been Useful enough, and wouldn't I please teach you Something New about Photography? Seems that I have been pointing you out the Rocks and Pitfalls of Fuzzyography; and if you Steer Clear of that, you will be doing pretty well, anyway. Don't ask me to say much about the Fussyites—that was good, wasn't it?—this time, for there is Nothing Doing in that line at present. Your Grandpa thinks that they are not Cutting Much Ice just now, anyhow, but maybe the warm weather has a little to do with that.

I feel that you're getting into one of those Hurries now, but I really am going to tell you Something Wonderful, and if you don't take the Pains to read it very carefully, I am sure that you will be sorry.

Here it is, all in a Jump;—

You need Never Waste your Platinum Paper any more! Never, under any circumstances, do you mind? I am going to tell you such Remarkable Things about Development that you can not only save Every piece that you try to print, but can even get some Artistic Effects such as you have never obtained before. I am going to give you a wonderful Rule, in just half a dozen words;—

ADAPT YOUR DEVELOPER TO THE INTENSITY OF THE PRINT. Isn't that Scientific and Reasonable?

GRANDPA EXPLAINS NEGATIVE PRINTING.

Have any of you put a piece of Platinotype Paper in the Printing Frame and then gone away to play Tag, come back and found that paper turned black where it ought to be just yellow, and a pale bronze where it ought to be dark? If so, didn't you quietly Wastebasket it while no one was looking, so as not to seem so careless, Martin? Now, you might have made a very Stunning Picture out of that Spoiled Print, one which would beat Gum Printing all to bits. In fact, all the Artistic People think that prints made in this way and then developed are Exceedingly Great Stunts until they know how it is done, and then they change their Minds quickly, just because it is Too Easy, and One can't very well have the Face to ask Sixty Dollars for something that can be made in a few seconds, and that is Why. I didn't want to tell you too quickly how that Negative Print is to be developed, and I enjoy keeping it to myself just a minute or so extra. Well, that Reversed Platinum Print is to be developed in a trayful of Just Plain Water. (I know that you're anxious for the Sun to come out, so that you can try this for yourselves.) After it is developed to suit, you wash the iron salt—which the makers and dealers call platinum, because it sounds so nice, but a Toothful of Platinum will spread over more sheets of Platinotype paper than I can tell you,—out of the paper with the usual sixty to one muriatic acid bath, and then finish by washing with clean water. There are, however, a good many things to remember if

you want to do Good Work in that way. One is, that this method of printing and developing greatly increases the Contrastiness of the Picture; and the Tail to that Dog is that it diminishes detail; another that Prints come up more slowly, and such details as appear at all come in last; and, last, that the prints so made are of a brownish black. It is hard to tell just what effect this way of printing your negative will produce until you try. It is not very good on portraits, except where an unusual effect is desired, or else a very flat negative to be strengthened, as it makes the shadows very heavy, and the highlights very white. I have, however, seen some portraits brought out in quite a brilliant way by this plan.

I am Dreadfully Afraid that you will find this very Hard to Understand, and fear that you will all be coming around to ask me about it at Sleepy Time to-morrow. Suppose that you get your papa to put it all into Little Words for you just this once? Or, since you seem to have made such Friends with the Editor of the Great Magazine, you might get him to pull you through and grease the Toboggan Slide of your understandings.

Now we'll get back to our Muttons as Francois says. You ought to know that, when the negative is very thin, it is a little hard to tell when the print is Cooked just enough to be reversed and developed in water. Here is a help;—With a thin negative, and when the paper has become fairly overprinted, so that that there is very little detail visible, kind of printed out with bronzing under the the clear glass, you know, then it is ready for water treatment, and it will give you a print with an astonishing amount of contrast from such a flat, seemingly worthless negative. If the negative represents something very interesting, it is well worth while to make two or three prints until you have obtained just the Effect that you want. Remember, too, that the water should be still, not falling on the print, ever, for that makes splotches. If air bubbles adhere, take an end of the print, and shake it gently, or pass it quickly through the water. This is much better with all forms of platinum development than jabbing at the print to punch off the bubbles, as that leaves white spots on the print, pretty certain sure; and by the way, you need never, under any circumstances, have white spots unless they are caused by the negative.

GRANDPA TELLS ABOUT SPOILED PAPER.

You know what I think about using that bad old platinum paper that makes the cats—did I mention that?—but wouldn't your eyes open up if I were to show you a strong, bright, contrasty print made from paper that had gone through three Summers and which had become so Demoralized that if you put it in developer it would blacken up without any exposure to the light at all. Talk about your Low Tones? Scat! But this is very different. Put it in the printing frame gently—it is Brown and Brittle with age—and print again for reversal, light parts dark and dark parts light, same as negative itself. Be sure to put a piece of cloth back of the paper, or it will make a streak at the joint caused by the difference in the temperature. Develop this also just in water and wash with a little stronger clearing bath, and your Grandpa's discovery—if no one else saw it first—certainly makes a Possibility out of impossible paper. A Friend gave your Grandpa Three whole cans of this Venerable Paper in the manner of a Benefactor, but your Grandpa don't like to waste things, and went on a Discovering Expedition.

GRANDPA TELLS OF CONTRAST FROM STRONG PRINTING.

But suppose that you just want to get a Stronger Effect than your Pet Negative usually gives;—You make a good, strong print, not reversed, but deep, as you have made before and thrown away. You failed every time because you obeyed the Cast Iron Rules accompanying the paper. The directions mention but one treatment, just saturated solution every time, like the Groceryman's old rule, "A Pint's a Pound, a Pint of Feathers or a Pint of Lead." Now follow the Wonderful Rule that I gave you, and you will have Success instead of Failure. "Adapt Developer to the Print," and what are you to do;—I think that I have gotten George guessing this time. But it's Easy;—Strong Print, WEAK Developer;—you'll guess the other part when we come to it. Certainly, you might have thought of it too. Examine your print carefully before developing. If just a little strong, weaken your normal saturated solution developer one-half with water. If quite strong, weaken five times. If very strong, weaken it ten to twenty times. If reversed, you already know what to do.

The last practice applies also to heavily overexposed and overdeveloped negatives, black and devoid of either detail or contrast. A long, long, deep print in the sun and a very dilute developer will be a Surpriser.

Now Grandpa's Getting Tired, as he has been digging some time at this, so it's pretty near Quitting Time. I have a lot more of Surprises for you, but will have to put them off until the next time. In the meanwhile I would like to have you and all your Little Friends make some of these experiments, and write to Grandpa about the Results- I will tell you anything I know if you just won't bother me when I'm sleepy. So Goodnight.

GRANDPA.

THE RHONE AT BELLEGARDE. By J. BAUD.

London Letter

PERCY LUND

THE Coronation and the dire misfortune which overtook the King has been the one topic which has occupied everyone since the great event which was looked forward to with most pleasurable anticipations, had to be postponed indefinitely. No words can describe the enormous amount of preparations which had been made preparations of every nature. Even among photographers, amateur and professional, arrangements for photographing either the great procession or minor ones, or decorated streets or some item in the great program that was to occupy the whole country, had been made upon an extensive scale, and bitter was the disappointment throughout, especially to those whose pecuniary expectations had been great, and whose outlay had been correspondingly considerable.

It is said that a Parisian cinematograph firm has lost several thousand pounds over the business, a mock coronation scene having been enacted in a building specially erected for the purpose, to imitate the interior of Westminster Abbey, the place itself being too dimly lighted for instantaneous photography. One cannot feel sorry for those who attempt to pass off frauds like this upon the people. Such films are exhibited to simple country folk, who believe that they actually represent what took place, and one can only express surprise that the authorities do not interfere to prevent such wholesale deception.

I regret to have to record the death of Dr. R. L. Maddox, at Southampton, at the age of 85. Born at Bath in 1816, he studied medicine at University College, London, ultimately taking his degree at Edinburg. Ill health compelled him to take a voyage around the world, and after that he began to practice at Constantinople. He also practised at Ajaccio and Genoa, besides occupying the post of resident physician to the late Duke of Montrose, the late Sir Watkins Williams Wynn and Lady Katherine Bannerman. He married twice. His contribution to the science of photography is the gelatino-bromide process, of which it may be fairly said that he was the discoverer — though not until his work had been taken several steps further by other experimenters was the genuine dry plate produced. Photographers come in for a good deal of abuse now-a-days. They are called camera fiends, refused admission to many public places, insulted by golfers, despised by painters and otherwise treated badly. It is a pleasant surprise therefore to find a clergyman in the Church of England actually preaching a special sermon for photographers. This event, a photographers' church parade, it was called, actually took place at Folkestone on Whit Sunday. The Rev. Edward Husband, of St. Michael's, preached from the text "In all thy ways acknowledge Him, and He shall direct thy paths." It is satisfactory to note that there was a large congregation, and that the service was bright with music, both instrumental and vocal. "It is customary with a great many people," said the preacher, "to sever religion from the arts and sciences, and to recognise no affinity the one with the other; and to keep religion and science shut off from one another in two different compartments of the mind. It has for its parallel those

who think that religion is a Sunday, and not a week-day observance. Men write over their Business door, "Business is business," and over the church door, "Religion is religion," and they say to religion, 'Never come in here,' and to business 'Never go in there,' and so our week-day work is put outside the domain of religion, although nearly the whole of Christ's religious life of thirty-three years on earth, was spent in work, as a carpenter at Nazareth.' Then he went on to show how science was a part of religion, and photography had done a great deal to reveal God in nature to the people. The whole address was wisely conceived and sensibly worded, and must have had a potent effect upon those who listened to it. I wish we might have more preaching of a like kind.

How often is the apology heard "I forgot to notice that the camera was crooked" or something of that sort, when an amateur displays his work to admiring friends. "I forgot to draw the slide, or to set the shutter-forgot some ingredient in the developer, or forgot to close the dark-room door." All these lapses of memory arise from want of practice, and the man who puts photography on one side for even a month or two, is pretty sure to find himself rusty when he begins to work again. There is no doubt about it, to become really proficient one must be in regular practice, that is, the details of procedure must come naturally without much thought, so that the mind is set free to look ahead—to consider the point of view, and each one of those other essential points necessary for good work. The man who has to consciously stop to think about setting the shutter, and levelling the camera, cannot give his undivided attention to the landscape—any more than an author, who manipulated his pen like a child at school, could write anything worth reading. Saturdays are too few in number, they ought to come at least twice a week. But the photographer who makes the best use of his Saturdays may do a great deal—he may keep himself in "form" and be always ready to take full advantage of a longer outing when occasion admits. But he who takes out the camera for his fortnight's holiday will rarely bring home anything of real merit.

In a recent issue of "Photography," I find the following useful directions for testing the focussing scale of a hand camera:—All the distances on the focussing scale of a hand camera can be tested for exactitude by the expenditure of one plate, if the work is done at night, preferably in a garden or large court. Fix the camera firmly in position, and measure very carefully from the lens the different distances. Place a lighted candle at one of the distances, set the lens to the scale, and and give a brief exposure. Then shift the candle to the second distance, and a little to one side, so that the image shall not overlay the first. Set the lens for that distance, and again expose. Do this for each distance. On developing the plate, all the images of the candle should be sharp. If not it will be easy to find out which marks on the scale are incorrect.

Photography as an Educator

HUBERT MCBEAN JOHNSTON

NOT long since, while in conversation with the editor of one of the New York magazines, I asked him what he considered to be the greatest present-day educator of the public. I expected to receive the reply, "The magazines", and I got it.

"That," said I; "includes really, the newspaper and the camera."

"Yes", he said; "that includes the newspaper and the camera. I had not thought of it in that particular light, but that is what it really amounts to, for in the production of a modern up-to-date periodical neither the printed matter nor the illustrations can stand alone. The one is not complete without the other."

The monthly magazine of a century ago was a very, very different affair from the monthly magazine of to-day, not only in the typographical excellence of its make up, but more so in the pictorial value of its illustrations,—if indeed it had any at all. Most of those published had none. The books of that date were even funnier. Did you ever see an old edition of John Bunyan's "Pilgrim's Progress?" No? Well a number of the large public libraries have copies and you would be well repaid for any time expended if you would get one and make a study of it. The point that will probably strike you first is the falsity of the perspective in most of the cuts. For instance in one where Christian is being pulled out of the Slough of Despond, the mud-hole is depicted by two horizontal lines, the one down at the bottom of the wood cut and the other cutting the picture into halves a little way above. Between these two, the hero of the book figures. Then another picture that strikes one as being particularly ludicrous, is that of Christiana and her children feasting before setting out on their journey. The family sit round an oval table—drawn on end apparently—on small three-legged stools. The on-looker sees the stools from below and all three legs are shown, while the table on the other hand is viewed from above and only the two supports at the end are in sight. In depicting the dishes and utensils the artist evidently drew each one from a different point of view. Then to cap the climax, the production has been composed in a stone-paved court-yard, for the picture is filled with paving-stones right up to the top. But perhaps the artist worked from an elevation, and were it not for the stools—and a few other minor points,—this might be supposed to be the case. Other incongruities are noticeable in almost every picture throughout the book; high stone walls drawn from the ground that show the perspective across the top, dishes sitting on the ground when the top is not shown, and a hundred—nay, a thousand and one other things too numerous to mention.

How on earth could such things as these be supposed to develop the artistic taste, to refine, or to increase the knowledge of the people of the time? The fact of the matter simply is that they didn't. Read an account of the lives and work of the artists of that day and you will very quickly grasp how matters stood and how the knowledge of what was good and what was bad, instead of being general as it is at the present day, was confined to a minority of the upper class and to trained artists, who considered such trivial matters as common book illustration much beneath them. It was an

epoch of darkness for book illustration. The world had, with the introduction of printing, gone beyond the beautifully illuminated missals of the old monks, and had not yet reached any process that could replace it satisfactorily. From the beginning of the century one slight improvement followed another, until in 1870 we find the periodicals of the day more or less profusely illustrated with drawings by fairly well known artists, though it was not until within the last few years, when photography and half-tone engraving commenced to take such leaps and bounds, that magazine illustrating reached anything like perfection.

Did you ever go among the common laborers of English nationality, in any large city, and talk with them?

If you didn't, you really ought to do it, to fully realize to how great an extent the masses are capable of understanding and discussing matters that one would be inclined to think were far beyond them. And the modern magazine with its photography is largely responsible for it. Where a hundred years ago the placing of an illustrated book in the hands of a five year-old-child would hardly have been thought of, today the marvellous advancement in the making of superior magazines at reduced prices, has resulted in even the lowest classes being able to give their children illustrated copies of the journals to amuse them. Long before these children are able to read, they are learning the history of the nation from the half-tones, increasing their knowledge of humanity and animal life, familiarizing themselves with the paintings of great artists and by studying the numerous other pictures from old Mother Nature, unconsciously refining and elevating the standards by which they judge work. As a child grows up he finds himself more and more surrounded by pictures of every description and each day learning hundreds of things by one glance at a half-tone, where were it not for photography, he would be compelled to wade through probably three or four pages of printed matter. Then the schools throughout the country are daily paying more attention to the cultivating of the pupils' minds by the showing of good pictures upon the walls, and where ten — yes, five years ago, the barrenness of the rooms was relieved only by cheap lithographs, today the walls are in many cases covered with photographs or half-tone engravings of celebrated paintings, or in cases where the teacher happens to be an amateur, photographs of local scenes are the subjects.

Then go a step farther, and in the high schools and colleges we will frequently find the lecture hall equipped with a stereopticon for showing enlarged reproductions of botanical and other subjects, so that the lecturer is enabled to give demonstrations more easily and more thoroughly than he was formerly able to do, when it was necessary for the whole class to be equipped with microscopes and each to have an individual specimen to study. And then too how photography has revolutionized so many other things, such as surgery, dentistry, bridge-building, safe-lock manufacturing and all kinds of machines, etc. How much better the medical student will remember a fact if he has a photograph of that particular incident being explained in the dissecting-room. Instead of a dull dry cut in a medical book he has a photograph of the same thing, a picture that he remembers the actual taking of, and that in looking at in after years he is able to group about with thoughts that would otherwise have long ago been forgotten. In dentistry it is the same way. Where formerly the dental student or full-fledged dentist who desired to

study the peculiarities of the teeth in the different races, or the numerous little deformities in different people's faces, was obliged to examine thousands of different mouths, he can now with the co-operation of his professional brethren all over the world, secure photographs of any thing interesting or unusual and learn all about it without leaving his office.

And then when he finds himself, without an X-ray apparatus, and indeed such instruments are now in the possession of hundreds of physicians all over the country, so that by this means alone, hundreds of new discoveries have already been made, and when one remembers that this branch of work is yet in its infancy, the possibilities that are before it are indeed wonderful to contemplate.

In the putting up of the large

THE FOREST NOOK. By N. N. Lothrop.

as is very frequently the case, called upon by one of his patients to explain some knotty technical point and make plain just why some particular operation is necessary, he has his photographs to fall back upon. In speaking of photography as applied to this branch of work, that marvellous and extremely useful discovery, the X-ray, must not be forgotten. No modern hospital is fully equipped

iron structures that span our streams and rivers, the camera again plays an extremely useful part, and where the engineers were formerly obliged to rely on drawings of the different sections, they can now see photographs of the whole thing as photographed from similar bridges already built. A recent magazine article in Leslie's Magazine, for instance, on "Caisson Sinking" (a branch

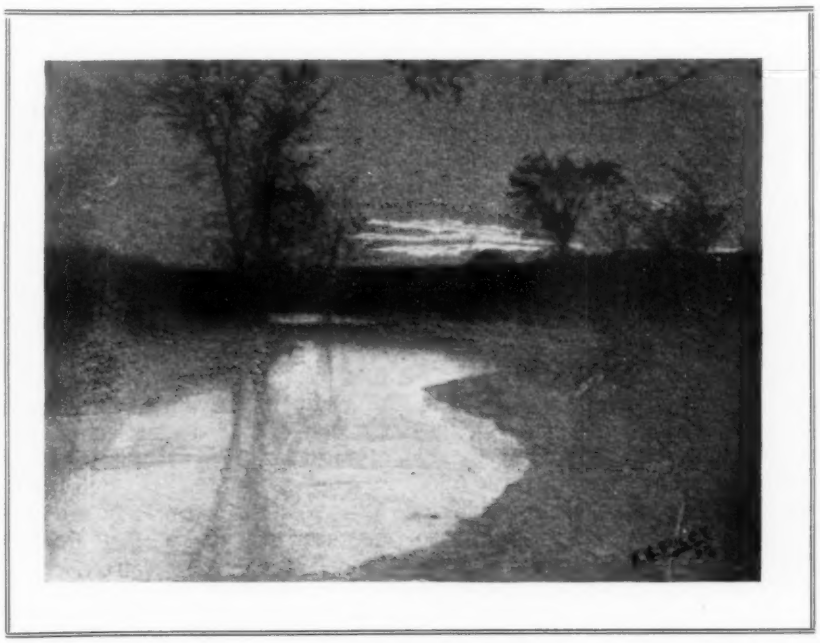
of bridge building) dealt very fully with the subject and by means of its illustrations was able to transfer to the lay mind a wonderfully clear impression of just what was meant. When a machine or a lock is being constructed in a large factory, it is almost always photographed at different stages of its construction and then if six months afterward it is desired to duplicate that particular piece, all that is necessary is to place the picture before the mechanic who did the work before, with instructions to turn out another similar piece. Almost all large manufacturing establishments have now men whose sole work is to look after this photographic end of the business.

Not by any means least among the means by which photography may be made to act as an educator, is to place the camera in the hands of an amateur. People who see an amateur photographer at work—especially if he be a friend,—are at once much interested in the art-science of picture making,—to say nothing of the amateur himself. The amateur starts in at first on any old thing, snapping here and there at figures or groups just as the fancy takes him. But wait for a year and see how he develops. True he may not develop, but may remain always a mere presser of the button, though on the other hand if he has it in him he may be able to rise above the making of mere photographs until he is able to produce pictures. A few weeks ago I had the privilege of spending a week in a city that possessed one of the largest and most up-to-date camera clubs on the continent, where every fortnight a new exhibit of pictures, the work of some rival club, was placed upon the walls so that it could be examined and studied by the members. I read all the photographic magazines each month and see an enormous number of good photographs every year, yet I am free to confess that the few days I spent in the study of those pictures on the walls of that camera club, revealed to me the fact that photography was an art in a way that I had never before realized. Surely, I thought, the hundreds of amateurs who daily come in contact with this work, whose privilege it is to be here throughout the year and make a study of, and compare each exhibit with the others, cannot fail to be educated most thoroughly as to what the constitutents of a good picture are, and cannot fail to realize wherein lay the points in which so many fail. How marvellous it is to contemplate the wonderful strides that art has made in the last century, so that no longer is the chance to see, and the ability to appreciate good pictures, confined exclusively to the upper and educated classes. During the perhaps ten or fifteen hours that I spent altogether in those club-rooms, I saw upwards of forty or fifty members, and of them, all but one-third belonged to the middle or lower class. Surely this is a proof that the camera educates. True enough there are a great many fourth-class professionals and amateurs who turn out work that is hardly calculated to refine or elevate, and yet curious as it may seem, such work does have its effect upon the populace, and not only has an effect, but has an effect for good, for if it does nothing else, it tends to show to the public what poor work is and to increase their capability to appreciate better productions when they see them.

A new field now opening up to the photographic fraternity, which is going to add largely to the educative scope of the camera, is book illustration. Quite recently the Doubleday-McClure Co. offered prizes for the best illustrations for the book, "The Gentleman from Indiana", and some of the pictures that were sub-

mitted in connection with the affair were little short of marvellous when one considers the difficulties that obstructed the path. That the idea is practical has been clearly proved, and though it is hardly ever likely to become popular with the great body of workers owing to the necessity of specially trained models and spécial clothing, yet to some of those more seriously inclined, it shows a great opportunity, and if it once comes into anything like general use its value as an educator of the public is going to be little short of incalculable.

Taking it all in all, there is practically no doubt whatever, that photography whether in the text books of the, schools, on the walls of the rooms in our homes, in the hands of the college student, in the factory and machine shop, must take rank in first place as one of the prime factors in the education of the public. When one considers that nine-tenths of all that photography has accomplished, has been done within the last twenty years, and that new discoveries are being made daily, the field that it must inevitably occupy in twenty years more is almost too vast for contemplation.



Though inland far we be
Our souls have sight of that immortal sea
Which brought us hither.

Wordsworth.

Photographing Criminals

HUGO ERICHSEN

With Illustrations from Photographs of B. G. Chappee, Official Photographer of the Detroit Police Department.

TIME was when the photographing of criminals was of great importance to the police as an aid in the detection and identification of evildoers. In fact, some years ago, it was the only means at the command of the authorities that enabled them to obtain definite information concerning suspicious characters and persons accused of crime, but unknown in the locality in which they had been apprehended At that time a regular exchange system was established between the larger cities of this country, which enabled each municipality to establish its own rogues' gallery, a sort of photographic reference library for consultation in moments of doubt. Recently I had the opportunity of inspecting some of the portly tomes of this kind in the Detroit Police Department and was struck with the vulgarity displayed by the countenances of the criminals, particularly the female members of the under world. But, of course, every rule has exceptions, and some of the lineaments looked innocent enough, with here and there one of those forbidding countenances commonly ascribed to miscreants. I do not remember having seen a single refined face in the whole collection, yet am not prepared to state that a more careful inspection of these pictorial records would not disclose it.

Since the advent of the Bertillon system photography has taken a minor place among the means of identification of malefactors. In fact, it might be dispensed with altogether and yet the system of the great Frenchman would be complete, the latter depending mainly upon measurements, as, for instance, those of the length of the nose and size of the ears, and physical characteristics that cannot be easily effaced. And yet, photography, as an accessory, will continue to be in vogue among the police departments throughout the country, and the time may never come when our guardians of the peace can altogether dispense with the use of the camera. At present every unknown prisoner, who may look as though he has seen the inside of a jail before, is promptly "mugged" subsequent to arrest, whereupon his "likeness" is forwarded to a central office at Washington, together with the usual Bertillon measurements. This bureau, maintained by the government, preserves records of criminals and possesses a collection of data that is continually increasing in extent. An exchange system has been established with foreign governments, which has proved very convenient in the apprehension and identification of transatlantic fugitives from justice.

The advantage of one central bureau is obvious. It is no longer necessary to send a photograph the rounds of a dozen different cities in order to establish the identity of a criminal. If he is not a novice, his record is known in the Washington office, the focus of our national detective system. No matter if a man is arrested in Maine or California, a recourse to the central bureau produces his record, if he has ever

come in conflict with the police anywhere in the United States. All the authorities in want of the information have to do is to "mug" the suspect, send his photographs and Bertillon measurements to the national capital, and ask the question: "Who is he"?

There is no delay in the receipt of an answer, as a rule. By mail, or telegraph if the exigencies of the case demand it, comes a complete description of the prisoner, his real name and aliases, age, original and criminal occupations, alleged home, number of arrests, and other details, including, mayhap, the interesting information that the culprit is "wanted" somewhere for a crime committed years ago. The camera, telegraph, and Bertillon system have done more to restrict crime than any other agency known to man.

FROM THE ROGUES' GALLERY. DETROIT, MICH.

It is interesting to note the attitude of criminals themselves toward the camera. Generally they know that "the jig is up" when they are arrested, and that their identification will be effected, no matter whether they allow themselves to be photographed or not. Usually, therefore, they submit calmly to the "mugging process," and sometimes even assist the police department photographer in his work by carrying out any suggestions he may offer. But occasionally an obstreperous prisoner is encountered, who must be forced to assume a proper pose and baffles, in every way, any attempt to secure a good photograph of him. These fellows know they cannot be compelled to keep their eyes open and so they endeavor to thwart justice by closing them tightly. "Little Dick," a notorious safe-cracker, is one of these individuals. It has long been his boast that no police department possesses a good portrait of him, which is probably true. The series of photographs of him, secured by Mr. Chappee, of Detroit, during the last visit of the noted crook to the City of the Straits, is probably the best in existence and will answer all practical purposes for identification. When a side view was taken of "Little Dick," it required the "gentle persuasion" of two police officers to get him into a proper position and to keep him there until an exposure had been made.

The popular notion that the photographers connected with the police authorities resort to instantaneous photography in their work is erroneous. They may use fast plates, but

the exposures, nine times out of ten, are made indoors and must be timed.

The people that give the most trouble to the man behind the camera at police headquarters are the recruits of the under world, the men and women just entering upon a career of crime. Many of them are still semi-respectable and dread the idea of having their portrait added to the rogues' gallery. But even they yield to tact and persuasion, when once it is made plain to them that resistance is useless.

THE PHOTOGRAPHY OF LOVE.

Maud E. Smith Hymers.

A "Snap" I took of Molly fair,
Of Molly fair and saucy;
The March wind ruffling up her hair
Looked picturesque and tossy.

A snap I took, and with a start
The kodak dropped in wonder:
I found that I'd exposed my heart
And thereby made a blunder.

(For wily Cupid up to date
Has thrown away his arrows,
And when he takes a shy at fate
A kodak's what he borrows.)

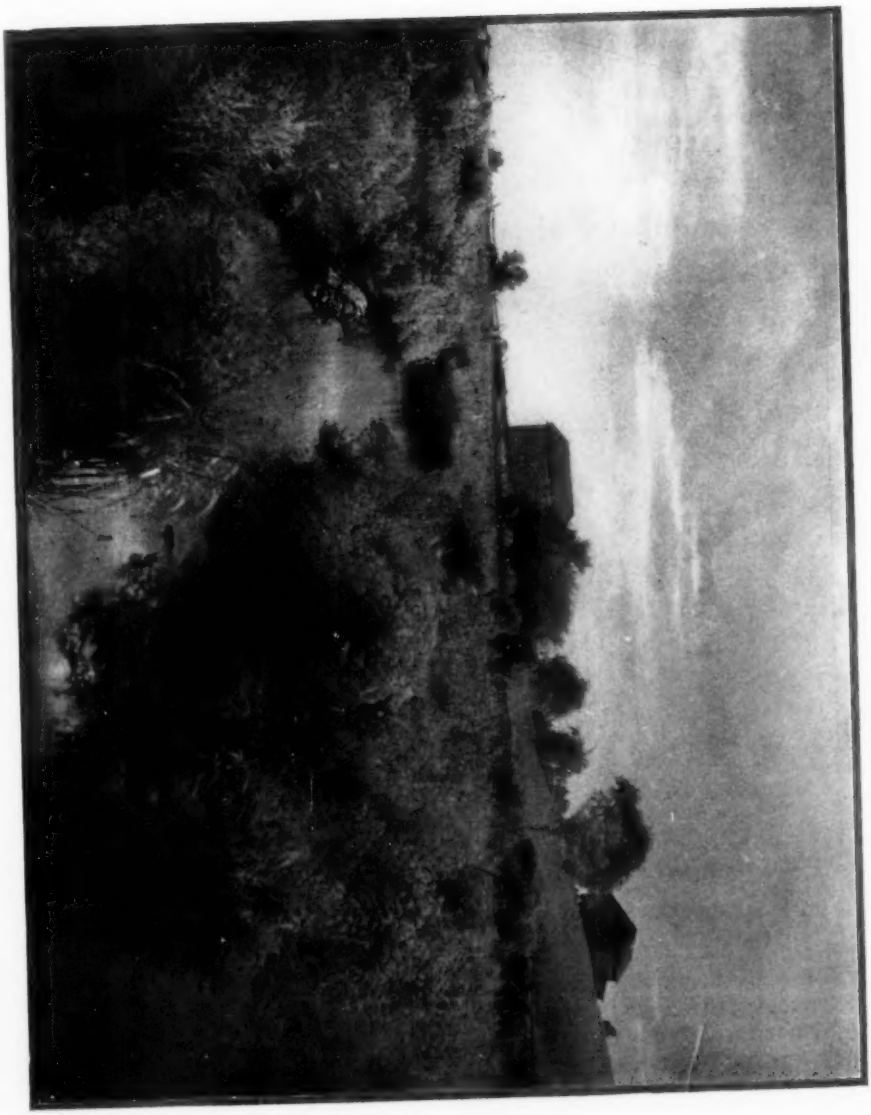
"Oh, maid!" I cried in sore dismay,
She laughed at my confession:
"'Twas Cupid did the work to-day,
My heart bears your impression.

And now I pray you mercy show
And favor grant my wooing;
For if your answer be a 'no',
This snap-shot's my undoing!"

But pretty Molly tossed her head
And laughed in merry measure;
"If not developed," then she said,
The print will fade at leisure.

I don't think much of snap shots, sir.
When hearts make such disclosure,
And when I wed I'd much prefer
To risk a time exposure."

AN AUGUST LANDSCAPE. W. E. Norris.



AN AUGUST LANDSCAPE. W. E. NORRIS.

February in Jamaica; Mostly Photographic

JULIAN BURROUGHS

THE method of taking photographs of athletes in their togs at Harvard was to take the man without asking him or if it was necessary to ask him snap the brute while he was saying "No". Skill acquired in such nefarious practices came handy on our trip through Jamaica last February—the East Indian coolies in their

EAST INDIAN COOLIES

white turbans and flowing robes of many colors, their silver bracelets and royal manners, always refused to have their photographs taken. When walking in the market I have had coolie women spring up at the sight of my camera and at once hide behind a pillar or a basket and the negroes were almost as bad. With a little stalking and perseverance however, I soon had all the pictures I wished of this class. To appear on the wharves at Bowden with a camera while the women were loading bananas was to be hailed in their nagal, querulous tones—"You draw me, Buckra?" "You draw me you pay me, Buckra!"

I wanted very much a "Home, Sweet Home, Jamaica" with all its characteristic activities and life—to set up a tripod and focus was to cause all the children and grown folks to fly for shelter. To "snap" it with a focal-plane shutter was to take a chance on focus and view. So I selected my hut with its bamboo matting and palm-leaf roof, its bread-fruit, star-apple, and cocoanut background, its fireplace in the front yard and its pigs and chickens, and then proceeded to make myself one of the family. These negroes were like children—shy at first but easy to "warm up"—soon I was telling them all about America and listening to their family affairs and becoming much at home generally. A "three-yence" then got me any thing I wanted in the picture line, the donkey and grandmother included.

At Port Henderson, one of the banana loading stations of the Boston Fruit Co. I had a streak of photographic luck. The fishermen were bringing in there gaudy, fantastic, tropical fish—green, blue, yellow, black, red, violet, of every shape imaginable from the fan-like angel, fish to the heavy-jawed red snapper, and were loading them on back on baskets, or, on lop-eared donkeys. They drew their boats up on the sand —heavy dug-out boats, formerly some proud orchid-loaded cotton-wood, and let the ill-fitting sails flap in the breeze while they carried out

THE RIO COBRE. JULIAN BURROUGHS

the fish. The women, their symmetrical brown legs reflected in the green water, and the children in rags were helping. It all made a picture which I wanted and which fate said I should have, without mar or blemish. I walked past, fixing my camera as I went and then wheeled suddenly and snapped the focal plane. When later I saw the negative, dripping with hypo, I almost howled with joy. It was at the mouth of the Rio Cobre and I named the picture that, for it brought back that idyllic tropical day — the green harbor with its brown patches of coral, the view out on the violet Caribbean and the great panorama of blue mountains above, all warmed by a sweet sea breeze. Without the little waves making lines into the picture, without the clouds, with some white sand on a black log in the corner or a hundred other trifles, the picture would be useless. For a 200th part of a second snap shot, with "straight" developing and printing and without any retouching or changing it would be hard to find its equal. There are "chance pictures" after all.

Most people going to the tropics underexpose their plate or films. The manager at the Jamaica Camera Exchange told me that films brought there for development were "uniformly underexposed". People imagine that the light is stronger in the tropics than in the north. Consider it is July in the States and expose as you would at home.

I had several overexposed plates but they were all taken on dark cloudy days when I allowed the darkness too much time. One of these was a photograph of a merry-go-round we found in the backwoods of the island. The thing was turned by hand and to ride on the blocks of wood that served for horses cost one three-pence a half hour. This was

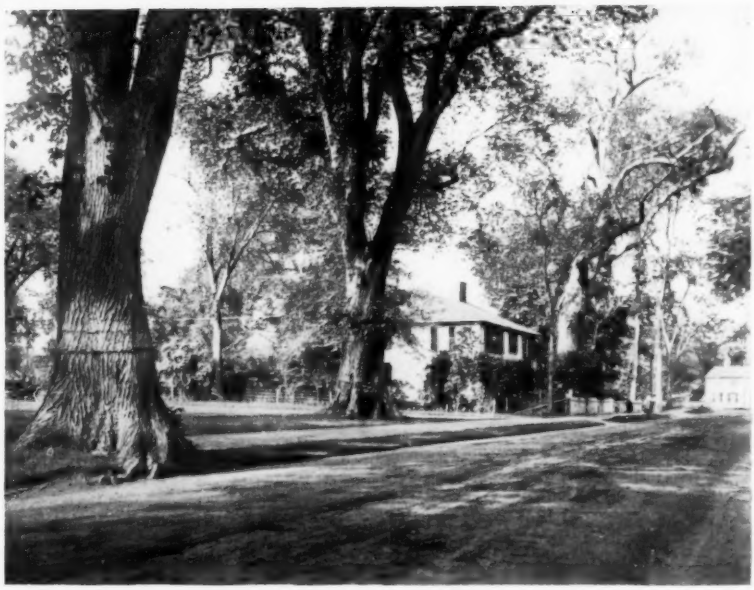
far in the middle of the island, on Rector River near the Coepit Country where tourists never go and a "threepence" was as hard to get as a half-dollar in the States. Merry-go-rounding was expensive business.

We went into Oxford Cavern and took some flashlights there of the great stalagmites and stalactites, the magnesium powder making a hollow "boom" that echoed through the great bat-filled caverns.

From Catherines Peak, 5070 feet straight up from the violet sea we had a panorama of sea and mountain of gigantic proportions. I removed the front lens and stopped down to F 64 and gave one second. It is hard to get through the haze of mountain views—a time exposure with a very small aperture and a development for contrast gave the best result. Without using a single or magnifying lens the mountains are so flattened that you become ashamed of them when later you show the print to your friends Coming back on the steamer we were all so seasick that we never thought of our plates. When it became smooth and we again thought of other things than death we found our plates soaking in three inches of salt water that had poured in a leaky porthole. But out of the two hundred not one was spoiled—the Stanley Dry Plate people certainly make waterproof plates.

On St. Thomas, in the east, the most tropical part of the island, we got the best pictures and the best fruit, excepting oranges, which were six pence a 300 lb. barrel in Manchester near the other end of the island. Along a lonely coast here with its old Spanish forts, its curving, cocoanut-rimmed beaches, its mangrove swamps and tropical birds we had lots of fun in the surf and with our cameras. A lonely island off shore, with a solitary cocoanut breasting the breeze and bedewed with the spray from the breakers that growled hoarsely over the coral reefs took my fancy and I saw a chance for a picture. Driving the legs of the tripod into the sand and speeding the ever trusty focal-plane until it could pace the wind I got my island and named it for my sweetheart in the snow-bound north. My companion in adventure had an Emily too, so I had to shut him out by calling it "My Emily's Island."

MY EMILY'S ISLAND. JULIAN BURROUGHS



IN OLD LEXINGTON, MASS. By W. G. Corthell.

Some Hints for Beginners

R. E. BLAIR

WHEN a person decides to take up photography the first ques ion he generally asks is: "What camera shall I get?" One thing you may be sure; if the camera is made by a reliable firm it will be a reliable camera.

When I started I had catalogues of almost every camera I know about and ended by getting one of which I had thought nothing. Generally speaking a four by five camera with rapid rectilinear lens and Unicum shutter will be found admirably suited to the use of amateurs; it is however largely a matter of taste, Personally I prefer plates to film but the amateur must take into account the advantages of both. Films are almost unbreakable and weigh about 1-20 as much as plates; while plates are vastly cheaper and perhaps handier to develop and print from. Both give about the same results in the end.

After buying a camera the next step is of course to use it. Take some simple view and develop the plate; if it is bad try to find out the trouble and avoid it in future. Do not make too many exposures at first and confine your efforts to out-door work. It may be well to make a record of the length of your exposure, the light, and results for future reference.

If you like some branch of the art particularly try to become expert in it. It takes a long time to become an expert "all-round" photographer. Most amateurs are particularly proficient in a single branch.

You will never get the full enjoy-

A PORTRAIT STUDY.

ment out of photography until you do all your own work. Besides being a great deal less expensive to do one's own developing and printing, there is much pleasure to be derived therefrom. Indeed there is a fascination in every step that can only be had by doing it for oneself.

Perhaps more failures are caused by not following directions than from any other cause. The manufacturers of the different plates and paper know best how their products should be manipulated. If they say to use fresh "hypo" for each dozen plates they mean just that, no more no less.

Having once found a plate that suits, keep to that one. Don't go from one to another; if you get good results on Stanley plates you probably will do no better on Cramer, although your friend may swear by Cramer. No paper, plate or camera could be made that would suit everyone; if so there would only be one kind. As it is Solio or blue print paper are perhaps the most easily used. Solio is good to begin with, then as you progress try platinum, Velox or one of the "Aristo" papers.

If you begin slowly and follow directions you will soon learn. Experience is the best teacher in photography as in all things.

The Elimination of Hypo by Washing

A. and L. Lumiere and Seyewetz.

THE elimination of the hypo-sulphite of soda retained by paper prints after fixing is generally obtained by running a stream of water into a dish containing the prints. If one thus washes prints upon emulsion paper for a long time, it is found that in spite of the enormous quantities of water used, there always remains in the emulsion a trace of hypo. Its presence may be easily proved by adding a crystal of silver nitrate to the last drops of liquid pressed out of the pile of prints. Thus it is necessary to leave hypo in the film if the prints are not washed long enough; if, on the contrary the washing is too long, the prints alter.

We have sought for a more rational treatment of the prints, which will not use volumes of water so disproportionate to the quantity of hypo to be removed. We first studied how the elimination of hypo takes place. All experiments were made on Lumiere citrate paper. We first submitted a single print 13 x 18 cm to a series of successive washings; at first we used 500 ccm of water for each treatment, but afterwards employed only 100 ccm, the minimum quantity which allowed complete submersion of the print. In both cases we made comparative trials, giving five, ten, twenty and thirty minutes washing. The quantity of hypo removed was estimated by titration with a solution of iodine in potassium iodide.

These titrations have proved:

1. That the total quantity of hypo removed by each washing is the same whether one uses 100 ccm or 500 ccm of water.

2. That the maximum quantity of hypo which is found in each wash-water is sensibly the same after five, ten, fifteen or thirty minutes of contact.

We need then merely show the results of one test to show all. Let us take the case in which the print remained each time five minutes in 100 ccm of water. Each time 80 ccm of liquid were titrated with iodine solution with starch as indicator. The print was sufficiently washed before toning to remove the excess of silver nitrate and citric acid, so that these substances might not affect the titration. Here are the results obtained with a two-hundedth normal solution of iodine.

Number of washing with 100 ccm of water	No of ccm of iodine solution for 100 ccm of wash water		Quantity of hypo contained in 100 ccm of wash water	
	Print roughly blotted	Print simply drained	Print roughly blotted	Print simply drained
1st washing	355.	450.	0.440	0.558
2nd "	18.	40.	0 0223	0.0496
3rd "	3.9	6.	0.0048	0.0078
4th "	1.5	1.8	0.00198	0.0022
5th "	0.62	1.25	0.00075	0.0015
6th "	0.5	0.5	0.00062	0.0006
7th "	0.25	0.25	0.00031	0.00031
8th "	0.125	0.125	0.00016	0.00016

The preceding figures show that the quantity of hypo remaining in the print pressed between blotters is about one twentieth as great before the second washing as before the first, and that it diminishes notably from the second to the third washing; it becomes very feeble after the fifth washing and can be considered as practically negligible after the seventh washing. In the case of the print which was simply drained, the removal was less rapid at first, but after the fourth treatment it became comparable to that of the other print. The results are sensibly identical if the print is only partially washed before toning, or even if not washed at all.

water to the next wash in the tray.

These results seem to prove that a sufficient elimination of hypo can be obtained by eight washings of five minutes each, with 100 ccm of water for each print, the dishes being well rinsed after each operation.

We have tried for comparison washing a print for twenty minutes under a tap giving about 7.5 liters per minute, that is consuming 150 liters of water. The print was finally soaked for five minutes in 100 ccm of water and the hypo in this titrated. The amount of iodine solution used was 1.1 ccm, nearly the same quantity as after the third washing in the process of elimination by diffusion. We have repeated the same experi-

Number of wash	Ccm of iodine per 100 ccm of water	Hypo in 100 ccm of water
1st	302	0.375
2nd	22.5	0.0279
3rd	2.9	0.00359
4th	0.87	0.00107
5th	0.75	0.00093
6th	0.5	0.00062
7th	0.25	0.00031
8th	0.125	0.00016

When it is attempted to reduce the time of washing to about one minute in place of five, the elimination of hypo is much less complete, and there is still 0.0013 g of hypo in 100 ccm of water. We can then adopt the period of about five minutes as the minimum time necessary to produce the maximum elimination. The preceding experiments have been repeated a great number of times, and in each case we have found sensibly the same results.

We then experimented with ten prints in place of one, using for each operation 1000 ccm of water. The prints were washed in trays 24 x 30 cm; they were kept moving continually, and simply drained quickly when passing them from one wash

ment, changing the dish at the end of ten minutes, in order to see if the small quantity of hypo which might remain at the bottom could prevent diffusion. The result of the titration was sensibly the same as when an uninterrupted current was used. Another experiment was made by washing the print on the back of a tray for twenty minutes; the print being face up for ten minutes and back up for ten more. The results of the titration were almost identical with those of the washing in a tray under a current of water.

At first we thought that it was possible to completely remove the hypo retained in the print by one or another of the proceding processes. We confided for proof of this fact to

the absence of any reaction produced by the addition of silver nitrate or iodine solution to the last wash water. We found, however, that in spite of the absence of these reactions, appreciable quantities of hypo were strongly held by the gelatine film. To prove their presence it suffices, after having well drained the prints, to squeeze them strongly with the hand, and collect the small quantity of liquid thus removed, which will be found to give a reaction for hypo. We have made a series of experiments to determine how one can best remove these last traces of hypo.

If the prints are squeezed after each washing, the quantity of hypo becomes very small and can be rapidly removed. This phenomenon has been already observed with various substances, especially with textile fibres impregnated with salts soluble in water: the removal of these salts is much facilitated by well wringing the fibres.

We have in our experiments compared different modes of pressing. One lot of prints was piled in a tray and then squeezed; another lot, after each washing, were placed one by one or several together between folded blotting papers, and then pressed. Finally we tried combining the two processes and found that in this way we obtained the most complete and rapid removal of hypo. It is necessary, however, after having pressed out the water from the pile of prints in the tray, to slightly wet them again before putting them between the blotters. Even if one is contented with simply pressing the prints each time between blotters, after seven successive washings with 100 ccm of water for each print, it is found that every trace of hypo is removed, and that there is no longer an observable reaction with nitrate of silver. The process is strikingly efficacious as compared with the ordinary method.

Allowing the prints to float in a 24x30 tray, we washed ten 13 x 18 prints for five hours, under a faucet delivering 7.5 liters per minute or 2250 liters in five hours. By squeezing the prints we found that they gave with silver nitrate a reaction nearly as strong as at the time when the wash water ceased to give a reaction for hypo. The conditions of washing are not much bettered if the the dish is changed every fifteen minutes to get rid of the hypo which might remain at the bottom of the tray. On the contrary, they are considerably improved if the prints are strongly pressed in the tray, and the water squeezed out is poured off before adding new wash water. In the ordinary way of washing, small quantities of hypo may accumulate at the bottom of the dish. This difficulty is obviated if the print is washed on a flat surface, as the back of a tray. On squeezing a print which was washed two hours on the back of a tray by a faucet delivering 450 liters per hour, the liquid collected still contained considerable quantities of hypo.

NOTE.—It is easy to appreciate the difficulty of removing the hypo contained in the gelatine film. It suffices to pour water upon a print placed on a porous brick. Whichever face of the print lies on the brick, the water stays on the surface. This shows with what difficulty water traverses the gelatine film. We have tried to eliminate every trace of hypo by simple washing in running water in a tray. After washing ten prints in a 30x40 tray with a faucet delivering 450 liters per hour, after twenty-four hours of continuous washing, or after using nearly 100 cubic meters of water, we still found a very feeble reaction with silver nitrate.

CONCLUSIONS.—The result of the preceding experiments is, that in the processes habitually employed for the washing of prints, most of the water is uselessly consumed. To ef-

fect the complete washing of a lot of ten prints, the following seems to us the most suitable method, if one wishes to obtain the quickest and most complete removal of hypo.

Immerse seven times successively, each time five minutes, in a large tray containing about a liter of water for each washing. Keep the prints moving so that they may not stick to each other. After each treatment place the prints one upon the other face down in a small tray. Press the prints heavily with the hands, pouring off the water squeezed out, moisten again with a small quantity of water, press them again between two blotters, spreading them out, and rolling them with a rubber roller.

The removal of hypo from plates is much more important than its elimination from prints. The danger to be avoided is the formation of a crystalline efflorescence after drying, for the alteration of the image is less to be feared than in the case of prints. We have determined the minimum amount of water necessary to obtain in a relatively short time a practically complete removal of hypo We titrated the wash waters from 13x18 plates soaked five minutes at a time in 100 ccm of water.

Number of wash	Ccm of iodine per 100 ccm of water	Hypo in 100 ccm of water
1st	268.	0.332
2nd	30.	0.0372
3rd	7.	0.00868
4th	2.	0.00248
5th	1.25	0.00155
6th	1.1	0.00136
7th	0.6	0.00074
8th	0.6	0.00074

In order to see if plates, like papers, hold hypo which can be removed only by squeezing, the gelatine was removed from the plates after the last washing and squeezed in a linen bag. The liquid squeezed out gave no perceptible reaction with silver nitrate. This tends to prove that in photographic papers it is the sizing of the paper, and not the emulsion, which holds the hypo.

We compared the quantities of hypo not removed from the plate, using three different methods of washing. First we placed a plate on the back of a tray, and allowed the water to run directly upon the film. In this way the hypo is removed as fast as it dissolves, and the plate does not remain in contact with the solution. In the second method, the plate was placed in a tray and washed for the same length of time with the same quantity of running water. The plate was thus constantly in contact with the wash water containing the eliminated hypo. In both these cases the washing lasted five minutes and used about 37 liters of water, In the third way the 13x18 plate was soaked five times in succession for five minutes each in 200 ccm of water, using only one liter in all. After each of these methods, the plate was soaked for 30 minutes in 200 ccm of water, half of which was then titrated with iodine. The amounts of hypo found were respectively 0.00272 g, 0.00544 g, and 0.0005 g.

Conclusions.—The results of the preceding experiments are:

1. That the washing of plates in running water consumes uselessly a quantity of water which is greater as the plate is less completely kept from contact with water containing dissolved hypo.

2. That the process which seems most efficacious and consumes the least water consists in soaking the plate five times successively in 200 ccm of pure water for each plate 13 x 18 cm.

In a forthcoming communication we propose to set forth the efficiency of certain oxidizing agents, known and unknown up to the present, in destroying hypo, and to show the conditions which these compounds must realize to be practically useful.

Foreign Abstracts

Redebelopment Of plates developed with pyro. A negative obtained by development with pyro, can be redeveloped by using a developer heated almost enough to melt the gelatine. The density is thus greatly increased and a nice grain is formed on the surface of the gelatine giving a strong relief. Bull. Soc. Franc. Phot.

Reducers. A reducer giving very good results almost similar to the ones obtained with ammonium persulphate has been recommended by Mr. Eder and later on by Mr. Clerc. A solution is made of 3 grammes of potassium bichromate and 30 cubic centimeters of sulphuric acid in 100 cubic centmeters water. This stock solution can be diluted from 200 to 1000 times for use.

A 10 percent solution hypo will bring back to its former state a negative to much reinforced by treatment with mercuric bi-cheoride and ammonia. After a good washing the negative can be again reinforced.

Kallitype Processes. 1 st. The paper is floated for a few minutes on a solution of double oxalate of iron and sodium then dried indiffused light. Print like platinum paper and develop with a 1. 5 per-cent solution of silver nitrate acidulated with citric acid:

2 nd. The paper is sensitized with the following solution.

Ferric oxalate . .	17.3
Silver nitrate . .	5.9
Water . .	100

Develop with one of the following solutions:

	Black grammes	Purple grammes	Sepia grammes
Sodium borate	13.5	13.2	0.0
Sodium chloride	9.	2.	5.6.
Water	100.	100.	100.
Bichromate of potanium	20.	20.	10.

Fix in ammonia water 2.5 per cent.

Drying Negatives. For some time past I have dried all my negatives by wiping them gently with a Turkish towel, and find the procedure perfectly safe and an advantage rather than otherwise, I grasp a mass of the towel in the hand, making it into a sort of pad, and draw it lightly several times across the face of the negative until, the superficial moisture has all been removed. This has the effect of removing chance particles of grit, hairs, etc., that often adhere to the negative. It insures even drying, while with such treatment the negative is usually ready for printing in a hour's time. This method has the advantage of being simpler and cheaper than other artificial drying, such as alcohol, etc. Brit. Journal of Photog.

Acid Bath A good formula for an acid clearing bath, is as follows:

Hypo	16 ounces
Sulphite of soda . .	2 ounces
Sulphuric acid . . .	1 dram
Chrome alum . .	1-2 ounce
Warm water . .	64 ounces

Dissolve the sulphite in eight ounces of the water. Then mix the sulphuric acid with two ounces of the water and slowly add to the sulphite solution. Dissolve the chrome alum in eight ounces of the water, and the hypo in the balance. Then add the sulphite solution, and finally the chrome alum. This is a good bath and will clean the negative as well as any clearing bath I have ever used. It can be repeatedly used and does not discolor. The only disadvantage about this, or any clearing bath, is that it works somewhat more slowly than straight hypo, mixed 16 ounces of hypo to 32 ounces of water. This is not a real disavantage, however, except to the amateurs who value time more than resutls.

Announcement of the PHOTO ERA Exhibit for 1902

IN order to encourage, stimulate and develop the art of picture making, and to enable people to see more and more clearly the beautiful and picturesque in the every day scenes of life, the PHOTO ERA has decided to offer a series of cash prizes for the best pictures submitted in each of the following classes, viz.: Landscapes, Marines, Clouds, Portraits, Genre Studies and Architecture.

AWARDS

Six cash prizes of $10.00 each will be awarded for the best pictures in each of these classes, and a grand prize in addition will be given for the best set or group of photographs submitted in any or all these classes. This award will consist of a solid silver loving cup, beautifully wrought and lined with gold, valued at $50.00; to become the property of any contestant who wins the grand prize award two years in succession.

SPECIAL AWARDS

A special award will be given for the best set of Historical Pictures submitted before Nov. 1, 1902, which should be photographs of places and persons of general historic interest and not often photographed. The award in this class will be a cash prize of $10.00.

CONDITIONS

Competitors may send in as many prints as they wish, provided each exhibit has the following entry form cut from this magazine, and attached to the print.

Each print should be suitably mounted, and may be passe partouted, framed or unframed.

In no case will prints be returned unless stamps are affixed to the prints.

All prints to be eligible should reach this office before Nov. 1, 1902.

ANNUAL PHOTOGRAPHIC CONTEST

Exhibitor_____

Address_____

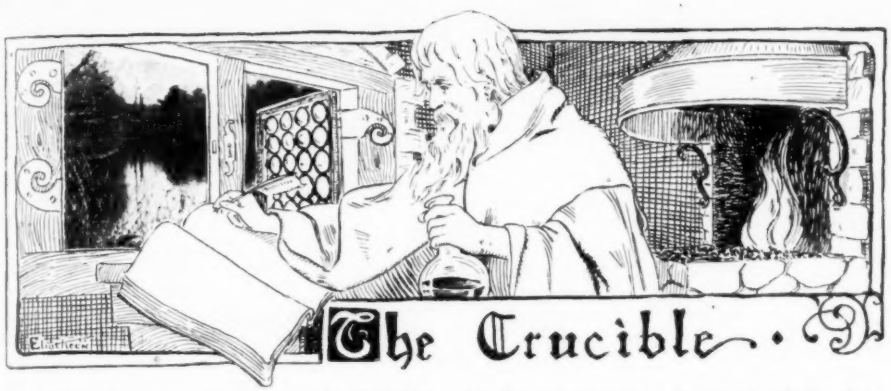
Title of Picture _____

Description: Time of day_____ Light_____ Lens_____

Stop_____ Exposure_____ Plate_____

Developer_____ Printing process_____

PHOTO ERA Contest_____ 1902.



The Crucible

LIQUID LENSES. Now that the English and American patents of Dr. Grün's new lenses have been allowed and published, it becomes possible to appreciate a little more fully the possibilities of his invention The lenses are to be obtained commercially in England, and the first point to be noted is that the extravagant claims which were made as to the size of aperture have been greatly reduced. Whereas it was stated that a cinematographic lens had been constructed whose opening was 2. 5 inches for a focal lenght of 1. 25 inches, or f 0. 5, we find that the commercial cinematographic lens has the opening f 1. 3 with a field of view of about 30°, while the series intended for ordinary uses has the opening f 2. 5 and a field of about 60°. This is a sufficiently large advance over existing lenses to make the lens indispensable to all who wish to do extremely rapid work, provided that the change of temperature does not affect the the lens too much. Dr. von Hoegh of the firm of Goerz, says that a change of temperature of only 2° will cause such a change in the optical constants as to render the lens useless; Dr. Grün, on the other hand, after many experiments, says that the lens can be used without trouble between 46° and 72° F. The patent claims are for use between lenses of an already corrected combination of a liquid which is refringent, but has very little dispersion, such as cedar oil, or monobromnaphtalene. Since the patents were issued, Dr. Grün states that he has replaced these liquids by another whose index of refraction is 1. 4980, but whose dispersive power is only 0. 00890, or practically nothing. This new liquid is not affecrdd by light and its constants are practically invariable with temperature. Dr. Grün got his original idea from the use of an oil-immersion microscope, and it is interesting to note that the principal objections which have been urged against his lens are the same as were advanced against the oil-immersion lens when it was first introduced for the microscope. It seems likely that they will be as futile, and that a new instrument of great power has been added to the photographic armarium. What that power is may be judged by the statement of Dr. Grün that he can sit in the stalls of a theatre and take perfect pictures of the performance with an exposure of a hundredth of a second. The largest size of instrument made for sale covers a plate 11 x 15 cm (4. 3 x 5. 9 inches.)

MANUFACTURE OF LARGE DISHES- The development of bromide enlargements and the use of large sized plates render necessary dishes of a size which are very expensive to purchase and often very unmanageable on account of their excessive weight, especially if they are of glass or porcelain. In consequence of the expense home-made trays are often employed, but these are very likely to leak and then become very bothersome. Perhaps the most general expedient is the lining of a wooden tray with oilcloth or sheet rubber, but such a tray usually has wrinkles and folds on the bottom, and hence is not particularly economical of solutions, besides being very likely to leak. Sheet lead may be employed as a lining, but the trays then become very heavy. A process frequently advocated is the painting of the inside of a wooden tray with asphaltum to make it watertight. In order to make this effective, several thin coats must be given, with thorough drying between, and it will then be found that the asphaltum will not resist the prolonged action of photographic chemicals. The process which we found to be most effectual is to paint the tray with a coat of glue to which has been added five or six per cent of bichromate of potassium. By exposing to sunlight for two or three hours, the coating becomes absolutely waterproof. We usually give three or four coats of glue, with thorough sunning after each, and find that the resulting tray leaves little to be desired for lightness and durability.

Notes and News.

The following is the program of the P. A. of N. E. Convention which will be held in Copley Hall, Boston, August 20-22 inclusive.

Wednesday, August 20, Morning session 10 A. M.—opening of the Convention. Mayor Collins, address of welcome. Response by vice-president Morris Burke Parkinson. President Hearn's address. Reading of communications. Lecture by Professor Griffith of the Detroit Art Institute.

Afternoon session 2 P. M. Lecture "Art as applied to Photography" by John J. Enneking, followed by criticism of pictures by this artist. Lecture "Advertising and Pictorial Photography the Key to Higher Prices" by C. P. Marshall. 5 P. M.—Demonstration of preparing and sensitizing carbon tissue, (in the side room.) 7.45 P. M.—Grand Orchestral Concert by the Boston Festival Orchestra, Emil Mollenhauer, conductor, assisted by Adah Campbell Hussey, contralto, and Marie Nichols, violinist. Followed by informal reception and collation.

Thursday, August 21, Morning session, 8 A. M.—Printing and Developing of Carbons (side room). 9 A. M.—Demonstration of American Artisto Products 10.30—short business-session. 11. 30—Demonstration of Lighting and Posing by noted operators under nearby sky-lights.

Afternoon session 2 P. M.—Lecture on Business Methods. (Speaker to be announced later.) 2.45 P. M.—Lecture by Professor Griffith. 4 P. M.—Steamboat excursion to Nantasket Beach, free to all members, ladies included. (Weather permitting). Salt water bathing facilities. The regular Banquet, admitting ladies, will take place early in the evening. (Tickets necessary). Return to the city by moonlight.

Friday, August 22, Morning Session, 8 A. M.—Mounting and Finishing of Carbon Prints. 9 A. M.—Demonstration of Platinum Papers, black and sepia. Reports of Secretary and Treasurer. Reports of Committees. Nomination and election of officers. 10 A. M.—Complimentary Trolley Ride given to the Ladies. 11. 30.—Demonstration under nearby sky lights of Lighting and Posing.

Afternoon session. 2 P. M.—Lecture by F. Dundas Todd. There will be other important demonstrations that cannot be arranged before this goes to press. They will be announced in the Souvenir Program, a copy of which is mailed to every member of the P. A. of N. E. and to nearly every photographer in the New England States. The secretary, George M. Bolton, will send out about 2000 copies of the Souvenir Program.

That the coming convention is going to eclipse all its predecessors is now an assured fact. The display of pictures promises to be unusually interesting, a prominent feature being contributions from famous European artists, such as Theo. and Oscar Hofmeister of Hamburg, Hildegard Lehners of Berlin, Ernest Sonntag of Dresden and especially the leading photographers of Moscow, who will exhibit in a body as "The Society of Artist Photographers of Moscow," the most important organization of its kind in the Russian Empire. There will also be notable exhibits from Sweden and Denmark. Many noted exhibits of the National Convention at Buffalo will also be seen at the Boston Convention. The Salon this year will be of rare interest, for it will contain contributions from many eminent amateurs. Thus the pictorial side will certainly be well cared for and reflect the highest credit upon the taste and discretion of the present board of officers, who have worked with uniform enthusiasm and fidelity, totally unsparing of mental and physical effort.

BOSTON. Mr. Wilfred A. French, at the close of twentyfive years of active interest in the business of Benjamin French & Co., photographic supply merchants has sold his interest therein to Mr. Arthur B. Frenzel, of Telluride, Colorado. Mr. French has labored earnestly and successfully to promote the interests of the business, and can now find time to take a long and well earned rest.

FILMINN the new filing case for films just placed on the market, is composed of seven pieces of smooth faced card board superinposed and overlapping each other the whole neatly bound together at the edges with gummed cloth.

The compartments are numbered from 1 to 6 on one side and from No 7 to 12 on the other side with a table for recording exposure, date, etc., with descriptive matter, forming a handsome receptacle for 12 films in each filminn, 12 filminns are housed in a neat case lettered on the back like a book with the name "Filminn" thus films can be filed in your book case which in appearance forms a part of the Library itself.

The Round Robin Guild

Conducted by Elizabeth Flint Wade

(Any amateur photographer may belong.)

"Mary, Mary, quite contrary,
How does your garden grow?"

This long-ago asked question is again being propounded to the lover of flowers. The answer, however, is quite a different one from that of Miss Mary of Mother Goose memory, who responded so sweetly,—

"With Silver Bells, and Cockle Shells,
And Pretty Maids all in a row."

The present day Miss Mary points with pride to her garden and replies, —

"With Fox gloves sweet, and Monk's Hoods neat,
And Hollyhocks all in a row."

for "ye old-time garden" is just now Mary's delight, and "ye old tyme posies" her special care.

In olden times the flower garden occupied the space between the street and the house, the path leading up to the hospitable front door with its fan and side lights and its dignified brass knocker being bordered with flowers which bloomed at different seasons, so that one always walked along a blossom edged walk from gate to door.

The old-time garden does not in the present day adorn the front of the house, that place being grassed and dignified by the name of lawn. It is placed at the side or if there is ground room, oftentimes in the rear of the house. But the cultivator fills it with the garden flowers which were such a delight and pleasure to our grandmothers, and like these early gardeners takes care that they grow in such abundance that one may gather the blossoms without stint.

The present day "old-tyme gardens" present from a photographic point of view many picturesque possibilities. The artistic taste of the "revivalist" has introduced pretty garden seats, vine-clad arbors and vine draped gate ways, and by a judicious arrangement of plants and paths made tantalizing vistas even in small spaces. Often in the center of one of these new-old gardens one comes across a sundial which has found its way to America and come into the possession of the collector through the scattering of the Lares and Penates of some once opulent, now indigent English house-holder.

Whenever the way of the amateur photographer leads him in the vicinity of one of these garden "revivals" or "survivals" he should not neglect the opportunity of making a photographic note of the same. A collection of pictures of gardens will always be a source of pleasure for exhibition purposes.

The thrifty amateur who desires to turn an honest penny will find a ready market for his prints of garden pictures. Now it is always a wise plan to have some special object in view even when pursuing one's hobby, and this month affords the best time for making pictures of gardens. We all know how fascinating are the flower catalogues filled with pictures of — whisper it lightly—impossible flowers, which no matter how strenuous cultivation is given to the seeds never approach anywhere near their catalogue counterparts. We know all this yet each year we pore over them and select seeds enough to fill, twenty times over, the ground room we control. Now if the florist would issue a catalogue illustrated with pictures of actual gardens, it would be doubly fascinating as a catalogue, and wou'd materially increase his sale of bulbs and seeds.

Just here is the amateur's occasion. The florists are already catering to the revived taste for old-time flowers by advertising bulbs and seeds, but as yet they have not included garden pictures in their catalogues.

Listen, ye wise Round Robiners, and profit by what ye hear!

Two or three might collaborate and make up a set of garden pictures which would appeal to the florist so strongly that he might send a generous check for their use in his next year's catalogue. By all means copyright the pictures. A collection, if I am not misinformed, may be copyrighted under one general title, stating of course the number of pictures and their titles. It would be too expensive to copyright them separately.

Orthochromatic plates would make the most satisfactory pictures, for they would give the color values of the flowers. The time of day should be before ten in the morning or after four in the afternoon. A still, cloudy, day would be best for pictures for reproduction, as the high-lights would not be so strong or the shadows so deep as on sunny days. Do not however choose a gray day, as the pictures would be flat.

The editor of the PHOTO ERA would like some pictures of gardens for reproduction in the magazine. If the members send enough good ones, a special "garden number" might be issued. Pictures from our members in foreign lands must be included

Will not some of our New Zealand members send pictures of flowers actually growing in a New Zealand garden?

USING THE CAMERA WITHOUT A LENS.

Have you ever used your camera without the lens? If not make the experiment and you will not only be surprised, but pleased with the result. This is the way it is done. It's really improved pin-hole photography.

Remove the lens and in its place substitute a lens barrel. In the slit for the diaphragms insert a disk of blackened tin in the center of which has been punctured a tiny hole no larger than can be made with a fine needle. One can burn the hole by fixing a small needle in a cork, heating the point redhot in the gas-flame and piercing the tin. The rough edge of the hole must be smoothed carefully with a piece of emery paper.

One focuses in the same way as when using a lens. The exposure must be much prolonged. Out-of-doors one should give from half to a full minute, indoors from five minutes to half an hour according to the lighting of the room. Use the quickest plates. The exposure is so long that moving objects make no impression on the plate. In out-of-door exposures when the wind is blowing, the trees, if there are any included in the picture. will be portrayed in the position which they retain the longest. If the wind blows freely and steadily wind-blown trees will be produced, as the tree remains in a bending longer than in an upright position. If the wind blows fitfully or in gusts the trees will be blurred, as in such a case they do not remain in one position long enough to make a distinct impression. If a light wind is blowing the trees will be in the natural upright position. The picture of the wind-blown trees is very interesting and gives the impression that the wind is actually blowing. Another feature of the picture is that one gets the softness and roundness in objects which is so often wanting in pictures photographed with a lens.

A picture of the Washington Monument has just been received made according to directions given our correspondents with a Premo camera with the lens removed and the pinhole disk substituted. It is quite a remarkable picture, the monument giving one the same impression of its separateness from its surroundings which is so striking a feature of the original.

Try your cameras without a lens and send me the results. The pictures are more satisfactory and far less trouble than a pinhole camera constructed specially for pinhole work.

PICTURES OF SILVER.

Plain salted paper sensitized with nitrate of silver is one of the easiest and simplest papers to prepare and produces tones closely resembling the favorite platinotype.

The prints made on this paper are so beautiful that it is well worth while experimenting with until one has learned to sensitize the paper evenly.

Any good unglazed paper will take the solution well. Rives photographic paper is the best and the cheapest for beginning. It is light in quality and makes nice prints for interleaving books. Unlike most thin papers it lies perfectly flat when printed and can be mounted at the corners in the same way as prints made on heavier paper. Japanese paper in cream tones is a fine paper, and any of the water-color papers of not too rough a surface are excellent. The paper is first salted and it is better to have this done at the dealers. in photographic supplies.

The sensitizing solution is made up of 240 grains of nitrate of silver and five ounces of distilled or filtered water. Dissolve the silver crystals in the water, then add strong liquid ammonia drop by drop, stirring the mixture constantly. The addition of the ammonia causes the formation of a brown precipitate. Add the ammonia slowly until this disappears and the solution is clear again. If after the the addition of 75 drops the solution is still turbid, clear it by filtering. Store in glass corked bottles and wrap the bottles in black needle paper. Light acts on the solution and discolors it.

Cut the paper in suitable sizes and mark one side lightly with a pencil in order to distinguish the sensitized side after it is dry. Turn enough of the sensitizing solution into a porcelain tray to cover to the depth of half an inch. Take the piece of paper by opposite corners and turn it back in a curve and lower the center in contact with the sensitizing solution gradually immersing the rest until it floats on the surface. Turn it over and if any air bubbles appear break them. Turn face down again and let the paper float for one or two minutes, then take it by one corner and draw it lightly across the edge of the tray to remove the surplus solution. Drain for a minute then pin on a flat board to dry. The sensitizing and drying of the paper should of course be done by gas or lamp-light.

Print no darker than the tone desired in the finished print as they do not lose any color in the toning bath. Use the combined bath if fresh. It will give soft grayish-black tones. Engraving black tones are obtained on this paper by toning it in an acetate of soda and gold bath, prepared as follows. Chloride of gold, 1 gr.; acetate of soda, 30 grs.; distilled or filtered water. 10 oz. Dissolve the gold in two ounces of water and neutralize with a few grains of

chalk. Dissolve the soda in the other eight ounces of water and add the gold solution. Prepare the bath at least twenty-four hours before using. It works best when old.

Brown tones may be obtained by printing a little darker than desired and placing the prints in a fixing bath of 1 oz. of hypo to 16 ounces of water. Wash and dry. Reddish tones are obtained by fixing, washing slightly, and placing the prints for two or three minutes in a weak solution of bichromate of potash.

The prints may be toned in a platinum bath. The following is an excellent formula. Dissolve 1-2 grain of platinum perchloride in 8 oz. of water. Add a few drops of carbonate of potash for a neutralizer, then stir in 1-2 drm. of formic acid. Place the prints in this bath without previous washing. Fix as for aristo or solio prints.

To avoid silver stains on the hands when sensitizing the paper use rubber finger tips or a pair of glass nippers.

The first trial with the paper will probably not be a perfect success. Do not attribute it to the formula but to your own lack of skill. Recall some of your earlier experiences in developing, and printing, and see if they were as successful as later work. It is practice in every department of work which makes the finished workman.

The paper should be stored in light tight boxes or better still wrapped in needle paper, and if not to be used for some time further protected by tinfoil.

The process of sensitizing is so simple and paper and chemicals so very cheap and the results so excellent that those who make and use the paper will be sure to keep on using it.

ANSWERS TO CORRESPONDENTS

C. G. Andrews. Any member of the Guild who has historical picturers of southwest Rhode Island or South East Connecticut is requested to send same to C. G. Andrews, Potter Hill, R. I., who will take charge of them and see them properly mounted and deposited with the Rhode Island Historical Society. Send unmounted platinotype prints. Number them on the back and send a description of the prints also numbered to correspond with that of the print to which it refers.

Mrs. W. H. Waring. No: winning a money prize in a photographic contest would not make an amateur a professional, neither would the selling of an occasional print or negative constitute a professional. By professional is understood a person who practices photography for a livelihood, not as a pastime.

Coleman C. The negative films which you enclose are all light struck and as the fog is in the same place on each negative it shows that your camera leaks light. It would be well to have it overhauled by an expert if you are not able to find the leak for yourself. Sometimes the fogging is due to the shutter catching and letting a ray of light strike the plate. In either case the camera should be attended to or all your negatives will be as light struck as those you enclose.

Fenton R. J. By ceramic photography is meant the process of transferring or applying photographs to china. The china is then fired, burning the print into the ware and making it permanent

Katherine Goodrich. A rectilinear lens is a lens which gives images of straight lines in all parts of the picture without distortion. An achromatic lens is a lens which is free from chromatic aberration, that is, its image does not show color at the edges after the manner of a prism. A rapid rectilinear would be the most satisfactory lens for you to buy for all-round work.

Sarah Carter. You ask what causes the yellow whites in the platinotype print which you enclose. In your description of the prints you say you first developed the print, washed it in clear water and then placed it in an acid bath. If you had read the directions carefully you would have seen that the print is transferred at once from the developing to the acid bath without previous washing. If washed before placing in the acid bath the bath will not bleach the yellow entirely from the paper.

George Siebold. A formula for metol developer which gives very good results is made of metol, 30 grs.; sulphite of sodium crystals, 180 grs.; carbonate of potassium, 90 grs.; water, 4 oz. Metol is an excellent chemical for bringing out detail in an underexposed plate. The most satisfactory negatives are made with a combination of metol and hydrochinon, instead of metol alone.

F. L. Parker. A formula for blue prints was given in the July number of the PHOTO EAR. To turn the blue prints to brown; after the print is washed and dried place it in a solution made of 1 1-2 oz. of stronger ammonia and 12 oz. of water until it has nearly lost its color. Rinse and place in a solution of tannic acid, 154 grs. to 7 1-2 oz. of water. Leave in this bath until of the required color, wash thoroughly and dry.

A member of the Guild has about fifty lantern slides of Millais paintings which she would like to sell. Address the Editor of the department for further information.

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AUGUST.

ALONG the roadside, like the flowers of gold
The tawny Incas for their gardens wrought,
Heavy with sunshine droops the golden rod;
And the red pennons of the cardinal flowers
Hang motionless upon their upright staves
The sky is hot and hazy, and the wind,
Wing-weary with its long flight from the south,
Unfelt; yet, closely scanned, yon maple leaf
With faintest motion, as one stirs in dreams,
Confesses it. The locust by the wall
Stabs the noon silence with his sharp alarm.
A single hay cart down the dusty road
Creaks slowly, with its driver fast asleep
On the load's top. Against the neighboring hill,
Huddled along the stone wall's shady side,
The sheep show white, as if a snowdrift still
Defied the Dog Star. Through the open door
A drowsy smell of flowers—gray heliotrope,
And white sweet clover, and shy mignonette
Comes faintly in, and silent chorus lends
To the pervading symphony of peace.

—*Whittier.*

The genius of the poet in painting this beautiful word picture, has given us, in musical rythm, an August landscape that one cannot fail to admire. And yet, to get the best effects in photographic work, the artist photographer, must constantly study nature, as the poet has done, to get his inspiration. Everywhere, one can see a perfect blending of lights and shadows in nature, and one's ability to select just the right moment when the lines and lights and shades portray the chief characteristics of one's subject, will be the final test of one's artistic success.

No true artist, be he painter, poet, or photographer, ever painted a picture without first being inspired, i. e. seeing in his imagination the picture he intended to paint. And the best source of this inspiration has been and always will be, nature.

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Where are you on this subject?
Are you in a rut?
What is your future?
Aren't you wasting time?
What are your brains worth?
Are you making what you should?
Are you ambitious?

These questions are for you to answer to yourself. We do not mean to be impertinent, but simply to bring you to a realization of your present position. Remember, it is the ambitious man who makes a success, not the born genius. The ambitious attend the conventions.

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A single hay cart down the dusty road
Creaks slowly, with its driver fast asleep
On the load's top. Against the neighboring hill,
Huddled along the stone wall's shady side,
The sheep show white, as if a snowdrift still
Defied the Dog Star. Through the open door
A drowsy smell of flowers—gray heliotrope,
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Photography and the Nebulae. We were pleased to note that the distinguished president of the Photographic Society of Great Britian has called public attention to this wonderful discovery. In his annual address to the Photographers' Convention at Cambridge, England, July 7th, Sir Robert Ball, declared that he was called upon to expound an exceptionally great subject. Personal affairs, the affairs of the Empire, indeed all human affairs past, present and future, shrank into insignificance in comparison with what is revealed in this mighty chapter from the Book of Nature. After explaining the Laplace theory, Sir Robert Ball said that if Laplace lived now, there were many objects in the heavens to which he could point in triumphant vindication of his theory. The age of photography had dawned, and the photographic plates had not only illustrated in the most marvellous manner the spiral nebulæ discovered by Lord Rosse, but they had in disclosing many other spiral nebulæ revealed beautiful spiral nebulæ invisible to any human eye, no matter what might be the telescope applied. They had in the great spiral nebulæ a marvellous illustration of those principles of celestial evolution which Laplace laid down for the formation of the solar system. He could imagine the astonishment and delight with which Kant or Laplace would look on a photo. of the great spiral nebulæ. If they tried to imagine the best picture of the primeval fire mist which had evolved into the solar system, he felt confident they could not obtain anything so effective as the photograph of the great spiral. Referring to another most remarkable discovery of modern times, he said Laplace had no means of testing his surmise as to the identity in material and composition of the sun and the earth; but modern methods enabled them to investigate the chemistry of the sun, and had shown that the elements of which the sun was composed were practically the same elements as those of which the earth was built. It is no small claim to be able to say that photography, as the handmaid of science, has been able to throw so much light upon these vast conceptions which overpower the human imagination and dwarf ordinary experience. To achieve such distinction in so exact and mathematical a science as astronomy is in itself strong testimony to the value of photography as an aid to the human faculties in searching out the laws and principles which govern all natural phenomena.

Wilfred A. French. It is with regret we announce elsewhere in this issue, the withdrawal from active business life of Wilfred A. French the well known photographic supply dealer of Boston. He was one of the best equipped men in his line.

In 1876 Mr. French went to Dresden, Germany, where he studied Dioptrics and Spectrum Analysis at the Royal Polytechnic Institute and at the optical establishment of Voigtlander & Son, Braunschweig, the construction of photographic lenses as well as their optical properties. In 1877 he devoted himself to the practical application of photographic lenses to every branch of photography including portraiture- landscape and photo-engraving. In this connection he visited the photographic studios of Lowy, Vienna; Hanfstangl, Munich; Loscher & Petsch, Berlin; Eilender, Cologne; Reutlinger and Nadar, Paris; Van der Weyde, London and La Fayette, Dublin.

In 1877 he returned to Boston, entering the business of Benj. French & Co., where he has been ever since.

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